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1 Routine/Function Prologues

1.1 Fortran: Module Interface lsm_module.F90 (Source File: lsm_module.F90)

This module contains interfaces and subroutines that control land surface model initialization, execution, reading and writing of restart files and other relevant land surface model computations.

REVISION HISTORY:

14Nov02 Sujay Kumar Initial Specification

INTERFACE:

```
module lsm_module
```

1.1.1 LIS_lsm_init (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_lsm_init
    module procedure init
end interface
```

1.1.2 LIS_allocate_lsm (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_allocate_lsm
```

1.1.3 LIS_setuplsm (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_setuplsm
```

1.1.4 LIS_lsm_main (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_lsm_main
```

1.1.5 LIS_force2tile (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_force2tile
```

1.1.6 LIS_readrestart (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_readrestart
```

1.1.7 LIS_writerestart (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_writerestart
```

1.1.8 LIS_lsm_output (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_lsm_output
```

1.1.9 LIS_setDynlsm (Source File: lsm_module.F90)

INTERFACE:

```
interface LIS_setDynlsm
```

INTERFACE:

```
subroutine init()
```

DESCRIPTION:

Setup functions for each land surface model

USES:

```
use lsm_pluginMod
```

CONTENTS:

```
call lsm_plugin
```

1.1.10 lsm_tile_allocate (Source File: lsm_module.F90)

Allocates memory for land surface model variables

INTERFACE:

```
subroutine lsm_tile_allocate()
```

USES:

```
use lisdrv_module, only: lis
#if ( defined OPENDAP )
    use opendap_module
#endif
```

CONTENTS:

```
#if ( defined OPENDAP )
    call opendap_init()
#endif
if ( lis%o%wsingle == 1 ) then
    call lsmini(lis%d%lsm,lis%d%nch)
else
    call lsmini(lis%d%lsm,lis%d%glbnch)
endif
```

1.1.11 lsm_setup (Source File: lsm_module.F90)

Completes land surface model initilaization

INTERFACE:

```
subroutine lsm_setup()
```

USES:

```
use lisdrv_module, only : lis
use tile_spmdMod, only : masterproc
```

CONTENTS:

```
call lsmsetup(lis%d%lsm)
```

1.1.12 run_lsm (Source File: lsm_module.F90)

Executes land surface model runs

INTERFACE:

```
subroutine run_lsm()
```

USES:

```
use lisdrv_module, only: lis
```

CONTENTS:

```
call lsmpar(lis%d%lsm)
```

1.1.13 lsm_readrestart (Source File: lsm_module.F90)

Reads restart files

INTERFACE:

```
subroutine lsm_readrestart()
```

USES:

```
use lisdrv_module, only : lis
```

CONTENTS:

```
call lsmrestart(lis%d%lsm,1)
```

1.1.14 write_output (Source File: lsm_module.F90)

Writes output of land surface model runs

INTERFACE:

```
subroutine write_output()
```

USES:

```
use lisdrv_module, only: lis
```

CONTENTS:

```
call lsmoutput(lis%d%lsm)
```

1.1.15 setDynParams (Source File: lsm_module.F90)

Updates time dependent land surface model parameters

INTERFACE:

```
subroutine setDynParams()
```

USES:

```
use lisdrv_module, only : lis
```

CONTENTS:

```
call lsmdynsetup(lis%d%lsm)
```

1.1.16 lsm_f2t (Source File: lsm_module.F90)

Transfers grid forcing to model tiles.

INTERFACE:

```
subroutine lsm_f2t()
```

USES:

```
use lisdrv_module, only: lis, grid,tile
use tile_spmdMod
use grid_spmdMod, only : gdisp
```

CONTENTS:

```
if(lis%f%ecor .eq. 1) then
    do t=1,di_array(iam)
        index = tile(t)%index-gdisp(iam)
        do f=1,lis%f%nforce
            force_tmp = grid(index)%forcing(1)
            force_hum = grid(index)%forcing(2)
            force_lwd = grid(index)%forcing(4)
            force_prs = grid(index)%forcing(7)
            if (f .eq. 1 .or. f .eq. 2 .or. f .eq. 4 .or. f .eq. 7) then
                call elevadjust(t,f,fforce,force_tmp,force_hum,force_lwd, &
                                force_prs)
                grid(index)%forcing(f)=fforce
            endif
        enddo
    enddo
end if
do t=1, di_array(iam)
    index = tile(t)%index -gdisp(iam)
    call lsmf2t(lis%d%lsm, t, grid(index)%forcing)
enddo
```

1.1.17 lsm_writerestart (Source File: lsm_module.F90)

Writes restart files

INTERFACE:

```
subroutine lsm_writerestart()
```

USES:

```
use lisdrv_module, only : lis
```

CONTENTS:

```
call lsmwrst(lis%d%lsm)
```